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CASE REPORT

Delayed presentation of luxatio erecta dislocation of the shoulder

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Introduction

We describe a case of delayed presentation of a luxatio erecta dislocation of the shoulder. There is an associated fracture of the greater tuberosity. Closed reduction failed and open reduction and reconstruction was required. At two-year follow-up, this gentleman was found to have avascular necrosis of the humeral head. Although the final outcome was poor in this case, it does give insights into the pathophysiology of this unusual type of shoulder dislocation.

Case description

A 30-year-old male presented to the emergency department with pain and restriction of movement affecting his right shoulder. He gave a description of an injury some three weeks previously in which he tripped on a step and fell forcibly abducting his shoulder against a brick wall.

Clinical examination revealed that the patient's arm was in a fixed abducted position of approximately 70°. All attempts at movement caused him severe pain. There was no associated neurology.

X-rays confirmed an inferior dislocation of the shoulder with a fracture of greater tuberosity (Fig. 1).

Materials and methods

Manipulative reduction of the shoulder under full general anaesthesia and muscle relaxant failed to improve the situation.

Open reduction was performed with the patient in a semi-seated position with the arm prepped separately. Standard extended delto-pectoral approach was employed. Identification of the standard landmarks proved to be difficult because of the chronicity of the injury and the dislocated position of the shoulder. The axillary nerve could not be identified. The lesser tuberosity was identified and the subscapularis tendon divided with the underlying capsule and stay sutures were applied. This allowed direct visualisation of the humeral head, which was noted to be impacted under the inferior most aspect of the glenoid.

The labrum and attached capsule had been avulsed from the glenoid inferiorly and anteriorly. There was a grade 3 SLAP lesion. The posterior labrum was undamaged.

Even after extensive soft tissue release reduction of the humeral head proved to be very difficult. The head was dis-impacted from the inferior glenoid

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Figure 1 Plain radiograph of the left shoulder illustrating inferior dislocation of the glenohumeral joint with an associated fracture of the greater tuberosity.

edge and the introduction of a lever into this area together with gentle traction over a period of five minutes allowed the inferior dislocation to be converted into an anterior dislocation. Subsequent release of posterior capsular structures allowed stable reduction (Fig. 2).

No attempt was made to repair the Bankart lesion or the slap lesion. However, a biceps tenodesis was undertaken. The intra-articular segment of the long head of biceps tendon was excised and the remaining biceps stump was tenodesed to the precipital groove using suture anchors.

The greater tuberosity fracture was mobilised, reduced and stabilised by means of intra-osseous 05 Ethibond sutures. The subscapularis was repaired. The patient's arm was immobilised for three weeks before mobilisation was permitted.

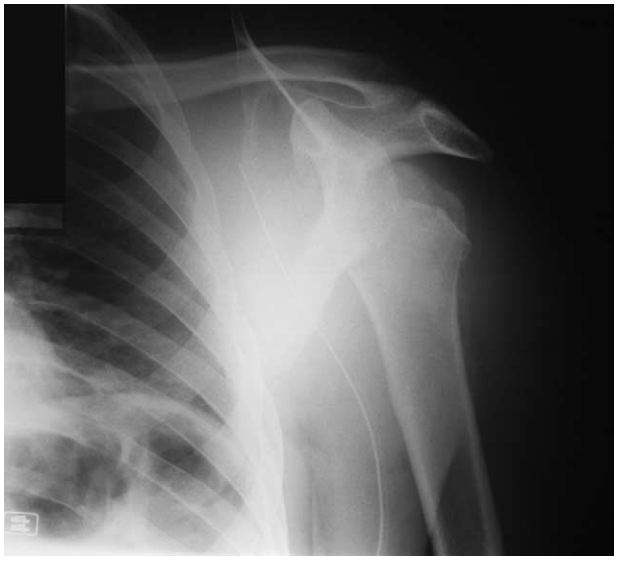

Figure 2 Plain radiograph of the left shoulder illustrating relocation of the humeral head.

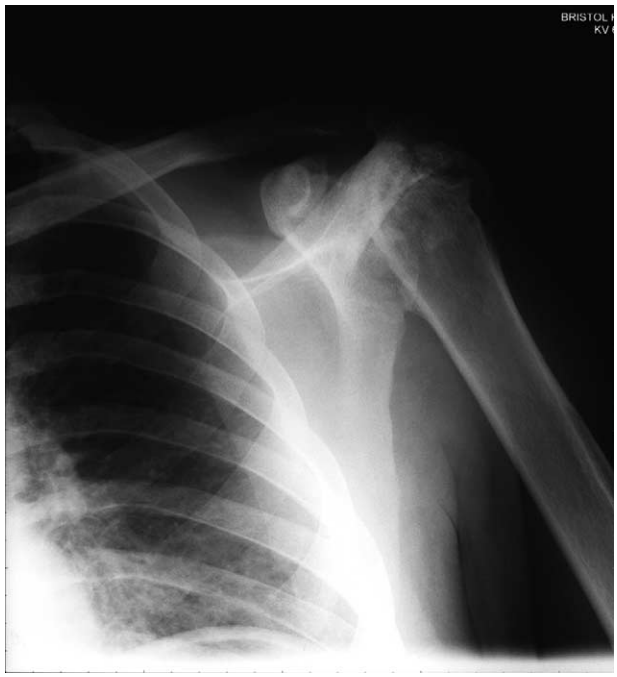

Figure 3 Plain radiograph of the left shoulder showing avascular necrosis of the humeral head.

The patient was less than assiduous with regard to his postoperative rehabilitation. At interview, six months later, he had no symptoms of pain but was left with a stiff shoulder. Movements were primarily scapulo-thoracic. He refused any further treatment in the form of arthrolysis of the joint. At two-year follow-up, he was found to have developed avascular necrosis of the humeral head (Fig. 3). Movement was solely scapulo-thoracic.

Discussion

Inferior dislocation of the shoulder is a relatively rare condition and represents 0.5% of shoulder dislocations.[2] Middledorff[4] and Schram[7] first described the abnormality in 1859.

Several different causes of luxatio erecta have been described including body surfing,[1] attempting overhead shots in racket sports[5] and the usual mechanism of hyperabduction and extension in a fall.

The presentation of luxatio erecta is classically with the arm locked in abduction, the elbow flexed and the hand held above the head. Creases can often be seen on top of the shoulder signifying the acute angle of the humerus with the acromion. The humeral head may indeed be palpable on the chest wall. The unmistakable and bizarre presentation of this dislocation makes its diagnosis relatively easy and unlike posterior dislocation of the shoulder,

late presentations or neglected cases of luxatio erecta have not been reported.

Mallon et al.[3] looked at 86 cases of luxatio erecta. Of these, 80% had an associated greater tuberosity fracture or rotator cuff tear, 60% sustained some degree of neurological impairment, but while 3.3% demonstrated vascular compromise at the time of injury they have not documented any cases which have led to avascular necrosis.

The relative rarity of this particular type of dislocation has meant that the associated intra-articular changes are not well documented. Schai and Hintermann[6] examined a patient with luxatio erecta arthroscopically and found a SLAP lesion, Bankart lesion and a fracture of the greater tuberosity. They suggested that the labral lesion was possibly the commonest type of pathology in addition to fractures of the greater tuberosity. Whilst Schai and Hintermann emphasised the need for surgical labral fixation, it is noteworthy that recurrent dislocation does not seem to be a major concern following luxatio erecta dislocations. Indeed the main concern following such dislocation is that of stiffness. For this reason, we elected not to undertake a Bankart repair. The SLAP lesion in our case was addressed with a tenodesis of the biceps tendon.

Yamamoto et al.[8] reviewed five cases of luxatio erecta, three of whom had concomitant fractures of the greater tuberosity. They report the prognosis for patients with luxatio erecta as good.

The outcome in our case was disappointing. The delayed presentation, the detachment of the greater tuberosity and the patient's lack of cooperation with rehabilitation are all implicated. This case demonstrates that there is a risk of avascular necrosis in neglected cases of luxatio erecta and this complication has not been previously reported in the literature to our knowledge.

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